

940772

January 5<sup>th</sup>, 2018

Ms. Jamie Wallerstedt  
Minnesota Pollution Control Agency  
Remediation Division  
520 Lafayette Avenue North  
St. Paul, Minnesota 55155

**Subject: Trend Analysis of Wells Currently Exceeding AECOM Identified Trigger Values;**  
MacGillis & Gibbs Superfund Site; AECOM Project 60549156; MPCA Work Order 3000019190

Ms. Wallerstedt,

AECOM Technical Services, Inc. (AECOM) has performed a trend analysis on a subset of wells included in the most recent sampling plan (Draft 2017) currently exceeding the AECOM defined trigger values identified in the MacGillis and Gibbs Extraction Well Contingency Plan (AECOM Contingency Memo 4-3-2017). AECOM utilized the Akrita-Thel-Sen (ATS) statistical method to analyze the PCP concentrations at these wells (MW-20, MW-19B, MW-23B and MW-105). Two separate trend analysis were performed for each well; one including PCP analytical data back to the year 2001 and the second includes all analytical data following the December 2014 extraction well shutdown of EW-1, EW-3B, EW-5, EW-12, EW-15, EW-16 and EW-18. These are included in **Table 1**.

**Results**

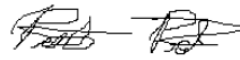
Based on the ATS trend analyses performed at the aforementioned wells in question; AECOM has identified two sampling locations where the trends indicate an increase in PCP concentrations (MW-20 and MW-23B). The rest of the trends were stable or decreasing.

Please contact Drew Tarara or Tony Coryell at 612-376-2000 with questions or comments in regards to this report or other project business.

Respectfully,



Andrew J. Tarara  
Project Manager  
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Petros Paulos  
Engineer  
[Petros.Paulos@aecom.com](mailto:Petros.Paulos@aecom.com)

**Table 1: MacGillis & Gibbs Pentachlorophenol Trend Analysis Results**

Well ID	Parameter	n	ND	%ND	Slope	Intercept	Tau	p-value	Significance	Increasing or Decreasing?
MW-19B	Pentachlorophenol	17	0	0%	-1.98E-01	8.19E+03	-6.69E-01	2.02E-04	Significant	Decreasing
MW-19B	Pentachlorophenol	9	0	0%	1.93E-01	-8.08E+03	2.22E-01	4.66E-01	No Significant Trend	No Significant Trend
MW-20	Pentachlorophenol	15	5	33%	2.52E-03	-9.68E+01	5.52E-01	3.61E-03	Significant	Increasing
MW-20	Pentachlorophenol	9	0	0%	-3.64E-01	1.57E+04	-3.89E-01	1.75E-01	No Significant Trend	No Significant Trend
MW-23B	Pentachlorophenol	13	0	0%	-5.07E-03	2.27E+02	-1.41E-01	5.41E-01	No Significant Trend	No Significant Trend
MW-23B	Pentachlorophenol	8	2	25%	5.10E-01	-2.17E+04	8.93E-01	2.77E-03	Significant	Increasing
MW-105	Pentachlorophenol	16	0	0%	-1.24E-01	5.08E+03	-7.67E-01	3.89E-05	Significant	Decreasing
MW-105	Pentachlorophenol	9	0	0%	-6.21E-03	3.47E+02	-5.56E-02	9.17E-01	No Significant Trend	No Significant Trend

Notes:

Trend Analysis Only Includes Sample Collected Post 2014 Extraction Well Shutdown

if p-value < 0.05, significant and slope is negative; then significantly decreasing trend

if p-value < 0.05, significant and slope is positive; then significantly increasing trend

if ≥75% nondetect, no trend analyzed

## Cibulskis, Karen

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**From:** Wallerstedt, Jamie (MPCA) <jamie.wallerstedt@state.mn.us>  
**Sent:** Friday, January 19, 2018 11:28 AM  
**To:** Cibulskis, Karen  
**Subject:** FW: Trend Analysis-M&G PCP Sampling Results  
**Attachments:** Trend Analysis Memo.pdf

Hi Karen – Please find attached the trend analysis completed by AECOM for the MacGillis and Gibbs wells post shut-down.

We are authorizing AECOM to turn the wells back on.

Thanks (and hope you are doing well)!  
Jamie

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**From:** Tarara, Andrew [mailto:Andrew.Tarara@aecom.com]  
**Sent:** Friday, January 05, 2018 3:58 PM  
**To:** Wallerstedt, Jamie (MPCA) <jamie.wallerstedt@state.mn.us>  
**Cc:** Paulos, Petros <Petros.Paulos@aecom.com>; Coryell, Tony <tony.coryell@aecom.com>; Beck, Daryl <daryl.beck@aecom.com>  
**Subject:** Trend Analysis-M&G PCP Sampling Results

Hi Jamie-Attached is the short letter describing the results of the recent trend analysis that we completed following the most recent sampling event at M&G. This was completed in accordance with the revised/approved Contingency Plan (October 2017). If you require any of the raw data, please let me know and we can send you the excel version of the table or have our modeler get that to you.

We will await your final recommendation as it relates to potentially turning any of the extraction wells back on. We understand you will reach out/notify the EPA about this data. We have evaluated EW-3B and EW-5 for re-start and both can go online upon request.

Thanks, and have a great weekend.

Drew

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